

WHAT IS CLAIMED IS:

1. A device comprising:

a hollow delivery cannula having a distal end and a proximal end, said cannula dimensioned to fit within an iatrogenic hole or naturally occurring lesion in an anulus fibrosus;

an advancer coupled to a probe member housed within said cannula, said probe member having a proximal end connected to said advancer and distal end connected to a probe tip, said probe member capable of being advanced outward from said distal end of said cannula; and

a curved passage within said distal end of said cannula wherein said probe member travels through said passage and may be advanced outward therefrom at an angle between 30 and 150 degrees with respect to the longitudinal axis of the cannula.

2. The device of Claim 1, further comprising:

a means for measuring the distance advanced by the probe, said means coupled to said advancer; and

a means for measuring the distance advanced by the cannula within said anulotomy or said lesion coupled to said cannula.

3. The device of Claim 1, wherein the probe member has a noncircular cross-sectional geometry.

4. The device of Claim 1, wherein the probe member has an ablation element coupled to said probe member proximal to said tip.

5. The device of Claim 1, wherein the probe member comprises nitinol.

6. The device of Claim 1, wherein the tip is selected from the group consisting of: a blunt-shaped tip, a sharpened tip, a scoop-shaped tip, and a chisel-shaped tip.

7. The device of Claim 1, wherein the tip is curved backward facing towards the interior of the disc.

8. The device of Claim 1, wherein the probe tip is curved downward with respect to the longitudinal axis and curved around until it faces the insertion device such that an interior aspect of the intervertebral disc is exposed only to a curved surface as the probe is deployed.

9. A method of manipulating a bodily tissue, wherein the tissue is enclosed by a definable outer layer of the same or different bodily tissue, the method comprising:

locating an opening in the outer layer;

inserting within said opening to a point past the outer layer a distal end of a hollow cannula, said cannula having a proximal end and a distal end and having an elongated longitudinal axis, said cannula slideably housing an advancer coupled to a probe member, said probe member having a proximal end connected to the advancer and said distal end of said probe member connected to a tip, said distal end of the probe member capable of being advanced and retracted through a curved slot at the distal end of the cannula via longitudinal movement of the advancer within said cannula; and

advancing the advancer within the cannula and causing the probe member to be advanced outward from the curved passage at an angle between 30 and 150 degrees relative to the long axis of the cannula such that the probe tip travels and manipulates tissue parallel to the intersection of the tissue with the definable outer layer of tissue.

10. The method of Claim 9, further comprising guiding said cannula.

11. The method of Claim 10, wherein said cannula is guided by tactile feedback.

12. The method of Claim 10, wherein said cannula is guided by auditory signals or visual images.

13. The method of Claim 12, wherein said auditory signals are obtained by ultrasound.

14. The method of Claim 12, wherein said visual images are obtained by a method selected from the group consisting of: magnetic resonance imaging, ultrasound, and fluoroscopy.

15. The method of Claim 9, wherein said opening is naturally occurring or iatrogenic hole.

16. A method of manipulating tissue within an intervertebral disc comprising:
inserting an insertion device into the intervertebral disc along a first axis;

deploying a probe having a probe tip laterally from the insertion device within the intervertebral disc along a second axis which is substantially transverse to the first axis; and

manipulating tissue via extending the probe tip across or through said tissue.

17. A method of measuring a bodily cavity or tissue comprising:
inserting the device of Claim 1 into the bodily cavity or tissue;
extending the probe tip across or through said bodily cavity or tissue; and
measuring the dimensions of said bodily cavity or tissue.
18. A device for treating the spine, comprising:
an elongate guide having a longitudinal axis;
an axially movable actuator, carried by the guide;
a probe, movable with the actuator; and
a deflection surface carried by the guide;
wherein axial movement of the actuator causes the probe to advance along the deflection surface at an angle to the longitudinal axis.
19. A device for treating the spine as in Claim 18, wherein the guide comprises an elongate tubular body having at least one lumen extending therethrough.
20. A device for treating the spine as in Claim 19, wherein the actuator extends through at least a portion of the guide.
21. A device for treating the spine as in Claim 18, wherein the probe comprises an elongate, flexible body attached to the actuator.
22. A device for treating the spine as in Claim 21, wherein the probe is biased in a nonlinear configuration.
23. A device for treating the spine as in Claim 22, wherein the probe comprises a nickel titanium alloy.
24. A method of performing a procedure in a disc in the spine, comprising the steps of:
advancing a device at least part way through an anulus; and
advancing a probe laterally from the device in a first direction along a portion of the anulus.

25. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a probe step comprises advancing the probe in between adjacent layers of the anulus.

26. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a probe step comprises advancing the probe along an interior surface of the anulus.

27. A method of performing a procedure in a disc as in Claim 24, further comprising the step of advancing the probe in a second direction along a portion of the anulus.

28. A method of performing a procedure in a disc as in Claim 24, further comprising the step of introducing media through the delivery device and into the disc.

29. A method of performing a procedure in a disc as in Claim 28, wherein the media comprises contrast media.

30. A method of performing a procedure in a disc as in Claim 28, wherein the media comprises a medication.

31. A method of performing a procedure in a disc as in Claim 28, wherein the media comprises a nucleus augmentation material.

32. A method of performing a procedure in a disc as in Claim 28, further comprising the step of introducing a prosthesis into the disc.

33. A method of performing a procedure in a disc as in Claim 32, further comprising the step of proximally retracting a push rod from a lumen in the delivery device, and introducing the prosthesis through the lumen.

34. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a device step comprises percutaneously advancing the device.

35. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a device step comprises advancing the device through a skin incision no greater than about two inches in length.

36. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a device step comprises advancing the device through a skin incision no greater than about one inch in length.

37. A method of performing a procedure in a disc as in Claim 24, wherein the advancing a device step comprises advancing the device through a skin incision no greater than about one half inch in length.

38. A method of measuring a dimension within a disc, comprising the steps of:

providing a measuring device, having an elongate body with a first stop surface thereon and an axially movable element having a second stop surface thereon;

advancing the device through an opening in an annulus;

bringing the first stop surface into contact with a first surface of the annulus;

bringing the second stop surface into contact with a second anatomical structure; and

determining the distance between the first and second stop surfaces to measure a dimension within the disc.

39. A method of measuring a dimension within a disc as in Claim 38, wherein the first surface is a proximal, outside surface of the annulus.

40. A method of measuring a dimension within a disc as in Claim 38, wherein the second surface is an anterior, interior surface of the annulus.

41. A method of measuring a dimension within a disc as in Claim 38, wherein the second surface is a posterior, interior surface of the annulus.

42. A method of measuring a dimension within a disc as in Claim 38, wherein the determining the distance step comprises determining the thickness of the annulus.

43. A method of measuring a dimension within a disc as in Claim 38, wherein the determining the distance step comprises determining the anterior – posterior dimension of the nuclear space.

44. A method of measuring a dimension within a disc as in Claim 38, wherein the determining the distance step comprises determining the sum of the anterior – posterior dimension of the nuclear space and the thickness of the posterior wall of the annulus.

45. A method of measuring a dimension within a disc as in Claim 38, wherein the determining the distance step comprises observing visual indicia of the distance on the measuring device.

46. A method of measuring a dimension within a disc as in Claim 38, wherein the bringing the second stop surface step comprises advancing the second stop laterally from the device in a first direction along the posterior annulus.

47. A method of measuring a dimension within a disc as in Claim 46, wherein the bringing the second stop surface step comprises advancing the second stop laterally from the device in a second direction along the posterior annulus.